

## Statement of Considerations

Advance Waiver of the Government's Patent Rights in Inventions arising under the Agreement between the Ciba-Geigy Corporation (Ciba-Geigy), The Dow Chemical Company (Dow), E. I. du Pont Nemours and Company (DuPont), General Electric Company (GE), Monsanto Company (Monsanto), and Zeneca, Inc. (Zeneca), hereinafter referred to as Consortium Member(s) and the Advanced Research Projects Agency (ARPA) concerning Advanced Environmental Remediation Technologies. W(A)-94-031

### Background

Chlorinated solvents such as trichloroethylene (TCE), perchlorethylene (PCE), and dichlorethane (DCA), have been produced and used for many years by industry and the Federal government during routine operations. The used solvents were then disposed of in a variety of ways that have resulted in the migration of the chemicals through the soil and ultimately the contamination of groundwater. It is estimated that the Department of Energy alone has over 2,500 plumes of chlorocarbon contamination on its sites. To date, over 50 Records of Decision have identified remediation needs for chlorinated solvents in groundwater.

Although processes such as "pump and treat" and vapor vacuum extraction have been developed for treating chlorocarbon contaminated groundwater, they are largely inefficient and very costly. The need to establish and validate more cost effective alternatives to these processes is widely recognized by problem owners as well as remediation contractors.

Bioprocessing has been used for many years in capacities such as the treatment of domestic sewage. Biotechnology development has recently been pursued to treat wastes in situ due to its potential cost effectiveness. During the past several years, DuPont has determined that in situ anaerobic biodegradation processes can be enhanced by careful addition of nutrients and control of groundwater flow, a process known as accelerated anaerobic biodegradation. Their studies have estimated that bioremediation processes may be able to save at least 50% of the costs associated with traditional treatments.

Additionally, GE, Dow, the Department of Energy (DOE), the United States Air Force (USAF), and the Environmental Protection Agency (EPA) have attempted to better understand the natural degradation of contaminants in the subsurface and the microbial role to provide a reliable risk assessment tool such that natural remediation, or intrinsic remediation, could be allowed to proceed at sites where effective control of contaminant migration is occurring. They estimate that this assessment, monitoring, and degradation process will save 75% of the cost of conventional

active treatments.

Therefore, in recognition of the tremendous volume of soil and groundwater in the U.S. that has been contaminated with chlorinated solvents, the ARPA and the Consortium Members entered into a collaboration, with the participation of the DOE, to combine the efforts and resources of the public and private sector in order to accelerate the development of these promising in situ remediation technologies. The Consortium Members will contribute 50% of the total cost of this collaboration, with DOE contributing the other 50% through a transfer of funds to ARPA. ARPA is entering this collaboration with the Consortium Members under its authority of 10 U.S.C. 2358 & 2371 and, as such, DOE does not consider ARPA's agreement with the Consortium Members to constitute a funding agreement as defined in 35 U.S.C. 201.

#### Advance Waiver of Consortium Members' and Subcontractors' Inventions

Section 152 of the Atomic Energy Act of 1954, as amended (42 USC 2182) and Section 9 of the Federal Non-nuclear Energy Research and Development Act of 1974 (42 USC 5908) generally require that the Government take title to subject inventions, unless a waiver is granted. In one particular, it is the purpose of this advance waiver to provide a waiver to the Consortium Member whose employee makes an invention under this proposed program, i.e., the Inventing Consortium Member(s), of the Government's U.S. and foreign patent rights in that invention, under the authority of 42 USC 2182 and 5908 and implementing regulations.

In another particular, it is also the purpose of this advance waiver to provide a waiver to the Consortium Member whose subcontractor makes an invention under such subcontract of this proposed program, of the Government's U.S. and foreign patent rights in the subcontractor invention, under the authority of 42 USC 2182 and 5908 and implementing regulations.

This waiver of the Government's rights in inventions as set forth herein is subject to the Government's usual retention of a royalty-free, non-exclusive, non-transferrable, irrevocable license to practice or to have practiced for or on behalf of the Government the waived inventions throughout the world. This waiver of the Government's rights in inventions as set forth herein is also subject to Article IX, Foreign Access to Technology, of the Agreement between ARPA and the Consortium Member(s) (see attached).

#### Conclusions/Recommendations

It is believed that granting the advance waiver of the scope described herein would provide the Consortium Members with the necessary incentive to invest their resources in the commercialization of the results of the collaboration in the fashion which will make the collaboration's benefits available to

the public in the shortest practicable time. It is also believed that the Government will benefit greatly from the results of the collaboration as the estimated cost of contaminated soil clean-up using standard methods exceeds \$500 million.

Accordingly, in view of the statutory objectives of DOE waiver policy, and in view of the factors to be considered under DOE's statutory patent waiver policy, all of which have been considered, it is recommended that this waiver as set forth above will best serve the interest of the United States and the general public. It is therefore recommended that the waiver be granted.

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Sue H. Palk  
Office of the General Counsel for  
Technology Transfer and  
Intellectual Property

Based on the foregoing Statement of Considerations, it is determined that the interest of the United States and the general public will best be served by a waiver of patent rights of the scope described above, and therefore the waiver is granted. This waiver shall not apply to any modification or extension of the ARPA/Consortium agreement, where through such modification or extension the purpose, scope, or cost of the agreement has been substantially altered.

CO

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